

Adaptive Predictive Power Control For The Uplink Channel In DS-CDMA Cellular Systems

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Summary

In this paper, we analyze the conventional closed-loop power-control system. We explain that the system behaves essentially as a companded delta modulator and then derive an expression for the power-control error in terms of the channel fading, which suggests methods for reducing the error variance. This is achieved by using a prediction technique for estimating the channel-power fading profile. The prediction module is combined with several proposed schemes for closed-loop power control. The resulting architectures are shown to result in improved performance in simulations.

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